

## Title (en)

IMPROVED FIBER OPTIC ROTATION SENSOR WITH EXTENDED DYNAMIC RANGE

## Publication

**EP 0123499 A3 19870923 (EN)**

## Application

**EP 84302598 A 19840417**

## Priority

- US 48811183 A 19830425
- US 48815583 A 19830425

## Abstract (en)

[origin: EP0123499A2] A fiber optic rotation sensor, employing the Sagnac effect comprising all fiber optic components positioned along a continuous, uninterrupted strand of fiber optic material. The rotation sensor includes a detection system utilizing a modulator (38) or modulators (38, 138) for phase modulating at first and second harmonic frequencies light waves which counter-propagate through a loop (14) formed in the fiber optic strand. Each modulator (38, 138) is operated at a specific frequency to eliminate amplitude modulation in the detected optical output signal. A phase sensitive detector (30, 46) generates a feedback error signal proportional to the magnitude of the first harmonic in the output optical signal. The feedback error signal controls a modulator (130) which controls the amplitude of the second harmonic driving signal for the second harmonic phase modulator (138) such that the first harmonic component in the output signal from the rotation sensor is cancelled or held within a small range of amplitudes.

## IPC 1-7

**G01C 19/64**

## IPC 8 full level

**G01C 19/00** (2013.01); **G01C 19/64** (2006.01); **G01C 19/72** (2006.01); **G02B 6/00** (2006.01); **H01S 3/083** (2006.01)

## CPC (source: EP KR)

**G01C 19/64** (2013.01 - KR); **G01C 19/726** (2013.01 - EP)

## Citation (search report)

- [A] US 4372685 A 19830208 - ULRICH REINHARD [DE]
- [A] WO 8203456 A1 19821014 - UNIV LELAND STANFORD JUNIOR [US]
- [XP] GB 2108652 A 19830518 - STANDARD TELEPHONES CABLES LTD
- [XP] FIRST INTERNATIONAL CONFERENCE ON OPTICAL FIBRE SENSORS, 26th - 28th April 1983, London, GB, pages 136-137; B.Y. KIM et al.: "Harmonic feed-back approach to fiber gyro scale factor stabilization"

## Cited by

EP0537414A1; CN111316511A; EP0222077A1; DE3606802A1; GB2255821A; GB2255821B; WO9008941A1; WO9008940A1

## Designated contracting state (EPC)

AT BE CH DE FR GB IT LI LU NL SE

## DOCDB simple family (publication)

**EP 0123499 A2 19841031; EP 0123499 A3 19870923; EP 0123499 B1 19910130;** AU 2721384 A 19841101; AU 569508 B2 19880204; BR 8401896 A 19841204; DE 3484025 D1 19910307; IL 71583 A 19880531; JP H0660820 B2 19940810; JP S606823 A 19850114; KR 850000671 A 19850228; KR 920008206 B1 19920925; NO 841587 L 19841026

## DOCDB simple family (application)

**EP 84302598 A 19840417;** AU 2721384 A 19840424; BR 8401896 A 19840424; DE 3484025 T 19840417; IL 7158384 A 19840419; JP 8278684 A 19840424; KR 840002187 A 19840424; NO 841587 A 19840418